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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,765	01/18/2001	Charles Anderson	3633-501	5931

20582 7590 01/28/2003

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1667 K STREET NW  
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WASHINGTON, DC 20006

EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 01/28/2003

1/6

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-14

# Office Action Summary

Application No.

09/761,765

Applicant(s)

ANDERSON ET AL.

Examiner

Andrew T Piziali

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3, 11-16 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-16 and 20-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 1775

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. OK Claims 1-3, 11-16 and 20-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In the amendment filed 12/13/02 the applicants added to claim 1 the limitation that there is at least one additional high index layer having a refractive index of at most 2.3. The specification is not enabling for this limitation. Although the specification discloses that the high index multilayer comprises titanium oxide and at least one additional high index layer having a refractive index of at most 2.3 (page 7, lines 14-31), the specification is not enabling for a separate additional layer with this specific property.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1775

4. Claims 1-3, 11-16, 20-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,073,451 to Iida et al. (hereinafter referred to as Iida) in view of US Patent No. 5,800,933 to Hartig et al. (hereinafter referred to as Hartig).

Regarding claims 1-3, 11-16, 20-23 and 25, Iida discloses a glass substrate with a multilayer stack comprising alternating thin layers of high and low refractive indices (column 7, lines 1-11). Iida discloses that the oxides of titanium, tin, zinc, tantalum, and zirconium may be used for the high refractive index antireflection layers (column 7, lines 1-11), but fails to mention the use of a high refractive index antireflection layer comprising at least one titanium oxide layer and at least one additional high index layer.

Hartig discloses the use of a high refractive index multilayer antireflection film comprising titanium oxide and silicon nitride (column 7, lines 14-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a multilayer antireflection film comprising titanium oxide and silicon nitride, as disclosed by Hartig, for the high refractive index film of Iida, because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice.

Regarding claims 14-16, Iida discloses that the low refractive index layers may comprise silicon oxide, aluminum oxide, or silicon/aluminum oxide, and further discloses that the layer most removed from the substrate may comprise silicon oxide, aluminum oxide, or silicon/aluminum oxide (column 7, lines 1-11 and column 7, lines 55-61).

Regarding claims 20-21, 23 and 25, Iida discloses that the multilayer structure may further include silver films and thereby exhibit electromagnetic shielding effects (column 6, lines

Art Unit: 1775

1-9). Iida also discloses that the multilayer coating may be used as a vehicle windshield or a rear window glass by lamination with an uncoated transparent glass plate using a plastic interlayer such as polyvinyl butryal (column 4, lines 4-53).

Regarding claim 22, Iida discloses that the glass plate may be either colorless or colored and that the glass may be curved (column 5, lines 44-56).

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iida in view of Hartig as applied to claim 22 above, and further in view of US Patent No. 5,948,544 to Kim.

Iida fails to mention or suggest the specific use of a polycarbonate or a polyacrylate polymer material in a multilayer structure, but Kim discloses that it is known in the art to use polycarbonates substrates, instead of glass substrates (column 1, lines 49-54), in certain applications such as applications involving window glass for buildings (column 1, lines 8-12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a polycarbonate substrate, as disclosed by Kim, as a substitute for the glass substrate of Iida, because polycarbonates provide a weight advantage and are impact resistant (column 1, lines 36-43).

### ***Response to Arguments***

6. Applicant's arguments filed 12/13/02 have been fully considered but they are not persuasive.

The applicant asserts that "There is absolutely no disclosure or suggestion in Iida to have a low refractive index layer with a refractive index in the range of 1.3-1.65." The examiner respectfully disagrees. Iida discloses in column 7, lines 1-11 that the second and fourth layers of

Art Unit: 1775

the "Type II" multilayer coating may be silicon oxide or aluminum oxide. Iida discloses that these materials have a refractive index between 1.4 and 1.7 (column 4, lines 29-32). In addition, the current applicant discloses that silicon oxide and aluminum oxide have refractive indices between 1.3 and 1.65 (page 4, lines 1-6 and page 8, lines 26-30).

The applicant also asserts that neither Iida or Hartig suggest the "increased optical performance by giving the substrate greater "stability" in its appearance to reflection." The examiner respectfully disagrees. In column 6, lines 26-38, Hartig discloses that use of the disclosed high refractive index multilayer results in non-mirror like and substantially neutral visible reflectance and color appearance when viewed from the glass side.

### *Conclusion*

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1775

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (703) 306-0145. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5665.

Andrew T Piziali  
Examiner  
Art Unit 1775



atp  
January 27, 2003

  
DEBORAH JONES

SUPERVISORY PATENT EXAMINER